

## MANUFACTURE OF COMPOUND SEMICONDUCTOR THIN FILM

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Patent Number: JP4132214  
Publication date: 1992-05-06  
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Requested Patent: ☐ JP4132214  
Application Number: JP19900251923 19900925  
Priority Number(s):  
IPC Classification: H01L21/205  
EC Classification:  
EC Classification:  
Equivalents:

### Abstract

**PURPOSE:** To easily execute the ALE growth operation of an InP-based compound semiconductor thin film and a mixed crystal-based compound semiconductor thin film and to satisfactorily control the composition of a mixed crystal by a method wherein respectively specific compounds are used as a raw-material compound containing a group Vb element and as a raw-material compound containing a group IIIb indium element.

**CONSTITUTION:** A raw-material compound which contains a group IIIb element and a group Vb element in the periodic table as elements of constituent components of a compound semiconductor thin film is introduced onto a substrate 18 placed in a vapor reaction container 17; and a III-V compound semiconductor thin film is manufactured by a chemical vapor growth method. At least one kind of compound selected from hydrates of said group Vb element is used as the raw-material compound containing the Vb element. At least one kind of compound selected from indium compounds, containing chlorine, expressed by  $(R_1)_2\text{InCl}$ ,  $R_2\text{InCl}_2$  and  $\text{InCl}$  (where  $R_1$  represents a 2C or more alkyl group or alkenyl group and  $R_2$  represents a 5C or less alkyl group or alkenyl group) is used as the raw-material compound containing group III b indium.